DOCUMENT RESUME

ED 259 632 HE 018 513

AUTHOR Hunter, Deborah E.
TITLE What Prolific Higher Education Scholars Have to Say about Their Careers. ASHE 1985 Annual Meeting Paper.
PUB DATE Mar 85
NOTE 56p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (Chicago, IL, March 15-17, 1985).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Administrators; Authors; *College Faculty; Decision Making; Educational Background; Family Influence; Graduate Study; High Achievement; Higher Education; Mentors; Peer Influence; Personality Traits; *Productivity; Professional Development; Professional Recognition; *Researchers; Research Projects; *Scholarship; Work Environment; *Writing for Publication
IDENTIFIERS *ASHE Annual Meeting

ABSTRACT

Educational, professional, and personal factors considered by prolific scholars as important in their high productivity were identified, along with work setting influences. Scholars were selected based on: the number of their periodical entries in selected journals during 1979-1983; nominations from knowledgeable sources such as journal editors; their current professional position; field of study; number of years since receipt of doctoral degree; and gender. Seven of 18 individuals selected for interviews were women; 12 were either faculty or institutional researchers, and 6 were administrators. A 19-item interview protocol was administered, which included questions about graduate school experiences, socialization patterns, family life influences, and personality traits that are positively related to research and publishing. In addition to significant relationships with colleagues, mentors, and family, patterns of scholarly activities were assessed, including time allocation for inquiry-related activities. Also considered were decision points during the career, and research-related coursework and experiences in graduate school. Six conclusions about prolific scholarship in higher education as a field of study are offered. (SW)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED259632

WHAT PROLIFIC HIGHER EDUCATION SCHOLARS HAVE TO SAY ABOUT THEIR CAREERS

Deborah E. Hunter
Assistant for Research, Evaluation, and Planning to Vice President for Student Affairs
University of Louisville

George D. Kuh
Associate Dean
School of Education
Indiana University

Presented at the meeting of the Association for the Study of Higher Education. Chicago, Illinois. March, 1985.

HE018513

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Deborah E. Hunter
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ASHE Association for the Study of Higher Education
The George Washington University/One Dupont Circle, Suite 630/Washington, D.C. 20036
(202) 296-2597

This paper was presented at the Annual Meeting of the Association for the Study of Higher Education held at the Palmer House Hotel in Chicago, Illinois, March 15-17, 1985. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

WHAT PROLIFIC HIGHER EDUCATION SCHOLARS HAVE TO SAY ABOUT THEIR CAREERS

Within the last decade studies of scholarly productivity in various fields have been conducted (Bayer & Dutton, 1977; Hamovitch & Morgenstern, 1977; Over, 1982; Reskin, 1977; Walton, 1982) including the research activity of higher education scholars (Braxton, 1984; Hunter & Kuh, 1984). All of these studies have relied primarily on data gathered from questionnaires and secondary sources. As a result, the richness and depth of information describing the inquiry behavior of prolific scholars have been attenuated. To gain greater insight into the interests, experiences, and motivations of scholars to engage in scholarly research, studies employing methods in addition to survey research would be useful.

The purpose of this study was to learn from prolific contributors to the higher education literature what they consider important in their development as prolific scholars. The study had three objectives:

(1) to identify educational and professional experiences considered by prolific scholars to be important in their development as high producers;

(2) to identify factors in the work setting conducive to encouraging a high level of productivity; and

(3) to identify personal characteristics such as work habits, family responsibilities, and achievement needs that prolific scholars believe contribute to a high level of scholarly activity.

Theoretical Perspectives

This study was guided by a key assumption: higher education scholars share patterns of personality traits, behaviors, and experiences. Behavior is commonly thought to be a function of an individual's personalogical characteristics (e.g., personality, ability, motivation) and experiences interacting with the demands and challenges of the present environment. Therefore, theories of adult and career development, personality, and socialization were used to develop illuminating questions to pose to prolific scholars and to analyze the scholars' responses to these questions.

The life cycle has been conceptualized as a sequence of growth stages (Chickering & Havighurst, 1981; Erickson, 1968; Gould, 1978; Sheehy, 1974). Levinson (1978) theorized that while everyone deals with certain development tasks in each growth stage, the manner in which these tasks are resolved depends on an individual's personality traits, societal forces, and situational factors. An analysis of the influences perceived as significant by prolific scholars during certain

stages of their lives (e.g., pre-college, college, graduate school, postgraduate employment, etc.) could be useful in understanding prolific scholars' subsequent emergence as high producers.

Holland's (1966) theory of career development emphasizes the influences of life experiences on career decisions. According to Holland (and some adult development theorists such as Levinson, 1978), the career path is an extension of personality and represents an attempt to integrate preferred behaviors and attitudes with life work.

Members of different occupational groups also reflect systematic differences in personality characteristics (Guilford, 1968; Marksberry, 1963; Roe, 1957; Roe & Siegelman, 1964). Personality profiles of creative individuals (Guilford, 1968; Marksberry, 1963) suggest that certain personality characteristics are common among creative individuals: openmindedness, curiosity, humor, willingness to work long hours over long periods of time, confidence, strong and varied interests. But, occupations can tolerate a broad range of personality types; therefore, the assumption that personality traits are the most influential factor in career selection and vocational achievement is probably an oversimplification (Holland, 1973; Pervin, 1968). For example, some individuals aspire to membership in certain occupational groups because of the status attached to the occupation (Blau & Duncan, 1967; Osipow,

1973). In addition, the "accident theory" of career paths advanced by Miller and Form (1951) suggests the importance of acknowledging the intervention of unexpected incidents or fortuitous circumstances in affecting career outcomes.

Socialization processes have been found to mediate and, over time, modify attitudes and behaviors so that they become consistent with those of the preferred reference group in the social system (Bragg, 1976; Mortimer & Simmons, 1978). Merton (1961) used the term "anticipatory socialization" to describe the journey of a neophyte through a progression of status levels, roles, and groups. The concept of "anticipatory socialization" of a neophyte researcher working to attain membership in a desired reference group (e.g., prolific scholars) may account for the acquisition of a disposition for the scholarly pursuit of knowledge. Such socialization processes apparently are at work in both graduate school (Gottlieb, 1961; Heiss, 1970, Long, 1978; Reskin, 1977, 1979) and undergraduate school (Weidman, 1979).

In this study the development of prolific higher education scholars was examined from an adult development life cycle perspective using concepts from personality, career development, and socialization theories to guide the inquiry. The salient factors and events which prolific scholars considered important to their unique behavior pattern (exceptional scholarly productivity) were of primary interest.

Related Research

A review of the literature indicated that adult development, career development, socialization, and personality theories have been used to better understand scholarly productivity. However, these perspectives have not been used in concert to examine research activity.

In one of the earliest studies of scholarly productivity using a career development perspective Lehman (1953) generated some controversy by concluding that researchers in their late thirties had reached their potential for creativity. The work of Pelz & Andrews (1966) corroborated the scholarly productivity pattern identified by Lehman and described productivity of scholars to resemble a "saddle-shaped curve." Fulton & Trow (1974) and Cole (1979) reported that research activity tended to increase with seniority of professional ranks. The findings of Blackburn & Havighurst (1979) substantiated the Buswell et al. (1966) conclusions that prolific research activity was associated with the completion of the doctorate by the age of 32, and negatively related to the number of years spent in teaching or administration prior to the pursuit of the doctoral degree. Lawrence & Blackburn (1984) found that junior professors appointed relatively recently had higher publication rates prior to being appointed as assistant professors than had their counterparts at the same time in their careers.

Studies of research productivity focusing upon the influence of socialization processes incorporated several types of predictor variables. Institutional affiliation (Clark & Centra, 1982; Hogan, 1981), collegial relations (Braxton, 1983; Finkelstein, 1982), importance of mentoring relationships (Long, 1978; Reskin, 1977), and influences playing upon graduate students at the start of their professional careers (Black et al., 1984; Gottlieb, 1961; Heiss, 1970; Kuh et al., 1979; Kuh & McCarthy, 1980; Worthen & Roaden, 1975) have been linked to scholarly productivity. Specifically, studies that compare the patterns of research activity between male and female scholars (Astin, 1969, 1973; Over, 1982), their preferences for research activity (Clark & Centra, 1982; Tryon, 1981), and the influence of child rearing on their publication activity (Hamovitch & Morgenstern (1977) have been conducted.

Factors motivating scholars to engage in inquiry-related projects have been frequently studied (Startup & Gruneberg, 1976), and the inquiry behavior and practices that scholars exhibit also have been studied (Blackburn & Havighurst, 1984). Few scholars write only when "inspired," and goal setting seems to be helpful in increasing productivity. Blackburn and Havighurst reported that the best predictor of publication was the amount of time spent engaged in writing activity. Negative predictors of productivity were reluctance to invite criticism by manuscript reviewers and a fear of making mistakes in print.

Although a good deal is known about persons engaged in knowledge production, most of this information has been generated through surveys or analyses of patterns of productivity. To date, highly productive contributors to the higher education literature have not been asked to share their perceptions of the factors associated with their unusual level of productivity.

Method

Instrumentation

A 19 item interview protocol was developed consistent with the theoretical bases of the study (i.e., career development, adult development, socialization, and personality theories). The first part of the interview format focused on the graduate school experiences of the respondents. For example, information was generated about the orientation of the graduate programs (e.g., research or practitioner), about coursework that had proven helpful in the development of research skills, and about experiences that were deemed significant in facilitating research interests such as assistantships. In addition, questions were posed about relationships with graduate school colleagues (peers) and faculty, including mentoring relationships, and the influence of these relationships upon subsequent research activity.

To learn about the relationship between socialization patterns and career development, questions were included about respondents' relationships with other higher education scholars. The respondent was invited to describe the environment at his/her first professional position after graduation and to comment whether the environment was supportive of collegial relationships resulting in collaborative research activities or support from peers. The respondents also were asked to reflect on the role that colleagues currently played in stimulating research activity. A special effort was made to elicit comments about the importance of professional associations in encouraging research and publication activities.

Information regarding the decision points central to the careers of prolific scholars was also requested. Of special interest was the point at which the respondent first chose to pursue a career in higher education, and how the pattern of behavior of research and publication activity was developed. Each respondent described the thinking behind seeking a certain type of position (i.e., administrative or faculty role). In addition, respondents commented on the role of "happenstance" or serendipitous events in advancing their careers as higher education scholars. The respondents were asked to recount any fortuitous incidents that subsequently proved to be beneficial to their careers as scholars.

Respondents were also invited to talk about their family life, the influence of a spouse on their research activities, and the effect of child rearing on their scholarly productivity. Respondents were further queried about when they engaged in research and publication activity (e.g., during the evening and weekend hours), and how these professional activities were "juggled" with demands of family ard social obligations.

Respondents identified personality traits that they believed were positively related to research and publication behavior. In addition, the scholars were invited to talk about their motivations to publish and were asked to describe what the process of writing for publication was like for them.

To determine any trends in their writing patterns, respondents were asked about the publications in which their manuscripts appeared and whether any shifts had occurred over the course of their careers in the types of publications in which their scholarly work appeared. Finally, the respondents were asked to note any additional factors that they believed would contribute to a better understanding of their development as prolific contributors to the higher education literature.

Sample

The sample was drawn from a group of 81 prolific scholars identified through a two-stage process: (1) number of periodi-

cal entries in selected journals between 1979 through 1983, and (2) nominations from "knowledge-gate keepers" such as journal editors. This process is described in detail in Hunter and Kuh (1984).

Purposeful sampling techniques (Guba & Lincoln, 1981) were utilized to target particular subgroups within the sample for inclusion in the telephone interview pool. In contrast to conventional random sampling, purposeful sampling ensures that certain respondent characteristics will be represented (Guba & Lincoln, 1981). Four criteria were used to select at least 16 but no more than 20 individuals from this group of 81 scholars: (1) nature of current professional position, (2) major emphasis (field of study) of doctoral degree program, (3) number of years since receipt of doctoral degree, and (4) gender.

Eighteen individuals were invited to be interviewed; of this group, 12 (66.66%) held positions that were primarily knowledge production in nature (i.e., faculty or institutional research). The remaining six individuals contacted for interviews held administrative positions. Seven of the 18 scholars invited for interviews were women. The interview group was comparable to the sample of 81 prolific scholars identified by Hunter & Kuh (1984) with respect to the nature of the professional position held, doctoral program, and number of years since completion of the doctorate. The one variable in which

the interview sample differed from the larger sample was gender. A disproportionate number of women were interviewed to learn as much as possible about female researchers, as relatively little is known about female higher education scholars.

Procedures

Standardized interviewing methods were utilized to collect information from each respondent. Standardized interview protocols are grounded in the assumption that stimuli or probes must be identical to accurately differentiate among respondents (i.e., to make certain respondents' differences are not a function of differences in the queries used). Standardization also insures that respondents speak to all the issues considered important. Therefore, the questions posed to each respondent were worded identically, and the sequence of the questions was the same for all respondents. In addition, the introduction to and statement of the purposes of the study were described in detail to provide further standardization. The four Hawthorne Rules for Conducting Interviews (Roethlisberger & Dickson, 1950) guided the procedures utilized for the interviews.

In June, 1984, the 18 individuals selected for participation in the interviews were contacted by telephone. The study's two purposes and methods were explored in detail. All

18 individuals agreed to participate, and a time was scheduled with each for the interview to take place.

The 18 interviews were conducted during June and July, 1984. Permission was obtained from each of the respondents to tape record the interview; confidentiality of responses was assured. An interview protocol was used to guide the questioning. In addition, extensive notes were taken for each response to insure complete collection of the information shared.

Data Analysis

As recommended by Guba & Lincoln (1981), the analysis of the interview data was conducted using principles of content analysis (Holsti, 1969). The 18 responses to each protocol item were organized into categories by types of responses. The techniques suggested by Banaka (1971) for analyzing the content of an interview were adopted. According to this technique, transcripts of the interviews were organized by topic or question. Once the responses to each item were arranged in topical order, the information was further categorized on the basis of subthemes or ideas. These categories of subgroups or ideas were not intended to be mutually exclusive. The proportion of scholars responding in a particular way was also calculated.

Limitations

Because this study requested information from prolific scholars in higher education, the findings cannot be generalized to high producers from other fields of study. While the procedures used to select the interview sample seemed reasonable, other criteria and procedures could have resulted in different individuals being included in the sample. Respondents were required to interpret events from many years earlier, and these recollections cannot always be presumed to be completely accurate or thorough.

Results

The results of this study are organized in four sections. First, findings related to the socialization of scholars are presented, including descriptions of significant relationships with professional peers, graduate school colleagues, mentors, and family. Second, patterns of scholarly activities are presented including descriptions of when and how prolific scholars allocate time for inquiry-related activities and the affect they associate with these activities.

Third, information is presented about career paths with special emphasis on the role of serendipitous and conscious decision points related to committing themselves to an active

research program. Information about the graduate school experience is then presented, including the orientation of their graduate programs, coursework, and other experiences (e.g., assistantships) that were useful in facilitating research skills. Finally, the personality traits that prolific scholars consider important to success in research are discussed.

Relationships with Colleagues, Mentors, and Family

Current Collegial Relationships. When asked about their current circles of professional colleagues, all of the respondents mentioned the importance of professional associations supporting their scholarly activities. As one colleague claimed, "Until I moved into the associations, I didn't know others like me." Professional associations facilitated research activity in two ways: (1) by providing an audience interested and competent to critique research on higher education, and (2) by supporting or nurturing a national network of colleagues useful for collaboration on research and for securing references and contacts.

The professional association most frequently mentioned as supporting collegial relationships was the Association for the Study of Higher Education (ASHE). Several scholars reported having been president of this association. The second most frequently mentioned association was the American Educational

Research Association (AERA) and Division J, Post-secondary Education. The American College Personnel Association (ACPA) ranked third in importance for encouraging scholarly activities. Several other associations were also mentioned: National Association of Student Personnel Administrators, Association of Institutional Researchers, American Association for Higher Education, Western Interstate Commission for Higher Education, Association of College and University Housing Officers, and American Sociological Association. Many scholars were active in more than one of these associations and commented on the dilemma presented each year regarding which annual conference to attend.

Respondents also mentioned frequent collaboration with their former graduate students. Much of this collaboration on research projects occurred soon after graduation. Often these research projects were extensions of research activity (i.e. assistantship projects or course research projects) initiated prior to the students' graduation. Several scholars also mentioned collaborating with recent graduates to aid them (former students) in building publication records.

Involvement in professional associations and continued contacts with former graduate students contributed to a national network of professional colleagues. This "network" was frequently mentioned as more important to enhance research productivity than colleagues at their current institutions.

Only three scholars mentioned collaborating with peers within their own departments.

One factor considered significant in collaborating with colleagues on research projects was compatibility of personalities and orientation to research. For example, one scholar mentioned working often with an individual whose preferred theoretical orientation and logic complemented his own practical orientation toward research.

Colleagial Relationships in First Professional Position Following Doctorate. Two factors related to early collegial relationships emerged as important to research. The primary factor was employment in an environment supportive of scholarly activities. Twelve of the respondents indicated the influence or power of the "work ethic" aided them in establishing effective work patterns and high rates of productivity to which to aspire. Only one of the scholars perceived the first professional position as intensely competitive and tense. This individual reported an absence of collaboration and a debilitating emphasis on "publishing." The second factor was a clear institutional expectation for conducting high quality research and disseminating the results through publications and conference presentations.

Respondents employed in administrative positions reported that their positions carried little expectation to engage in

inquiry activities. One respondent reported that while practitioner colleagues were not engaged in research, the supervising administrator was supportive of her research activities. Further, she indicated that assuming an administrative position upon receipt of the doctorate not only provided little encouragement for engaging in research, but actually served to discourage research aspirations! In addition, her liberal arts faculty colleagues made it evident that student affairs administrators had no place attempting to contribute to academic literature. Had her interest in knowledge production been weaker, such suspicious regard for her work would have inhibited further research endeavors.

Collegial Relationships in Graduate School. Eleven respondents said that graduate school colleagues had little influence on their subsequent success as prolific contributors to the literature. For some, personal circumstances precluded full-time graduate study which, in turn, limited interaction with peers. Several speculations were offered for this. One respondent reported that most other graduate students were significantly older and several even had children his age; therefore, he had little in common with his peers. Attendance in night courses was also reported as hindering interactions among graduate students in their programs. Finally, some

claimed that commuting to class also limited the amount of informal interaction outside regularly scheduled classes.

Most frequently mentioned was the social and intellectual climate created through interaction among students. They characterized their graduate school social and intellectual milieu as "stimulating," but not overly competitive. For example, one used the term "collegial banter" to represent the informal exchanges of ideas that occurred among students within the department, and he claimed to have developed his dissertation topic from a stimulating argument with another graduate student. Another scholar reported that work on his first publication developed when he and another graduate student convinced themselves they were capable of engaging in research superior to that which had just appeared in a professional journal.

Sharing professional goals was another way in which graduate school colleagues were reported to have influenced respondents' subsequent research interests. For example, several scholars described an early identification with other graduate students who were planning higher education careers similar to their own (e.g. as either educational administrators or faculty members).

Relationships with Mentors. Ten scholars referred to faculty from their graduate programs as "mentors." Four others

held assistantship or research positions with their "mentors." One scholar described his faculty mentor, who had also served on his dissertation committee, as being "100 percent responsive to me. He gave me quick turnaround with my work and prodded me to stay on tasks." Another scholar also recalled being "pushed as far as I could go" by his mentor.

In addition to the important feedback that their faculty mentors provided them, these scholars also felt that their mentors had "confidence" in them. One female scholar recalled that it was important to her to have an adviser who "was supportive of women," and valued the confidence that he had in her ability. Another scholar reported that through the "encouraging prodding" of his mentor he was able to allay a fear that "his ideas were not worthy of public attention."

Five respondents had mentors who were supervisors at the institutions at which they were employed early in their careers. One scholar claimed that early in his first professional position after receipt of the doctorate, a more established colleague took an active interest in his budding research interests by saying, "Here is how we do research!" Another recalled that her mentor, who had also served as her supervisor, had encouraged her to examine the student attrition problem on their campus, a study that evolved into her first publication.

Two reported "adopting" mentors later in their careers. Through professional networking, these scholars became acquainted with established higher education researchers who took an interest in the development of their careers.

How did mentors influence their careers? The 18 scholars responded with one voice, "I can't even trace all the ways he/she helped me." The mentors were influential in four ways: (1) assisted the scholars in becoming known in professional circles through joint presentations and similar activities; (2) assisted in securing professional positions, both initial posts and subsequent positions; (3) collaborated on initial research and publication activities; and (4) served as role models.

Family Relationships. Five respondents had spouses who also had academic careers; their spouses often served as manuscript reviewers or editors. The sentiment of the remaining married respondents concerning the influence of their spouses on their research success can be summed up in the words of one of the individuals interviewed, "My spouse has no direct influence on my writing but is extremely supportive of my professional activities and exhibits an unconditional acceptance of my drive to publish."

All respondents spoke of sacrifices that the spouse had made to facilitate his/her scholarly careers. The primary sacrifice was foregoing evening, weekend, and vacation time to

accommodate research and publication activities. Only one scholar mentioned the "tension" that such conscientious attention to the profession periodically produced within the family and stated, "Time spent with spouse and children is the one thing we shouldn't cut, but it's easy to do."

The unmarried respondents believed that it was easier for them to devote themselves to research and publication activities knowing they were not denying attention to their spouses or children. The unmarried scholars remarked on the freedom they felt to pursue their research interests any time of the evening or weekend periods without feeling selfish about pursuing their own interests. One of the married scholars commented that it was easier to immerse himself in research activities and "give himself up to his work" when he was single.

All of the respondents with children spoke of the delicate "balancing act" required to be successful in both professional and family affairs. Only one denied that having children had any impact upon efforts to be successful as a higher education scholar.

Several spoke of the "guilt" they felt in allocating so much time to professional activities. One admitted that although his wife never complained in earlier years, she has subsequently shared with him how difficult it was for her to raise their children "single-handedly" while he was seeking tenure and subsequent promotions. Another remarked that

although he felt "guilty" over the amount of time he spent on research activities, he felt that the "flexibility" of life as a faculty member made him more available to his family during the day than other careers would have allowed. In the words of one senior scholar, "Looking back now, I can see that there were some Saturdays I should have gone fishing with my family, but I don't really see any negative impact on their growth."

The two female respondents with children commented about the arrangements they have made with their husbands to share household and child rearing responsibilities. One remarked that her husband is now comfortable with "role differentiation," and no longer considers himself merely "helping out with household chores." The second spoke of the "enormous strain" associated with child rearing during the tenure earning period. She spoke of the pressure she felt to be an "impossible person" who continually looked neat, unhurried, and smart. In retrospect, she admitted that the decision to have paid help (e.g. housekeepers, live-in babysitters) was critical for her and her spouse to alleviate these pressures.

One male scholar admitted that while there still is a certain amount of "conflict," he does strive to assume a "fair share" of the child rearing responsibilities. Another admitted that similar adjustments had only became necessary recently as his wife began a new career. He claimed to be "fortunate" during his early years on a tenure line because his wife did not

work outside the home and took responsibility for child rearing and household management.

Patterns of Scholarly Activities

Almost all those interviewed reported scheduling periods of time to work on research projects. One commented, "I don't run on inspiration, I just block periods of time to get the work done." One claimed to respond to the project highest on a list of priorities at that time, although some projects "sit and sit because they never rose high enough on my list to complete them. Sometimes I just take a day to devote to finishing those projects."

Deadlines apparently dictate work priorities. As one scholar claimed, "There is nothing very systematic about my schedule. Writing gets done as a direct consequence of a deadline. I have found that if I have no deadline, my inspiration doesn't rise to the occasion."

Most devoted either the early evening or late night time periods to their research; two noted that they used time for research that others "probably spend in front of their televisions." Some used early morning hours; two reported that between 6:00 a.m. and 8:00 a.m. they were able to do their best writing.

About a third stayed home one day each week to write. As one scholar noted, "I can't write in my office. I have too many projects and people interrupting me there." Others said their home environments were preferable for writing because they were "quieter, less distracting, and more orderly." One reported that although she spent one day each week in her home office, she still paid for child-care on those days so that her work would not be interrupted.

Some "escape to the office" during the evenings and weekends to engage in research activities. As one scholar claimed, "Although my family is supportive of my work and tries not to interfere, I still do my best work by getting away from my family and coming into the office."

Vacation periods also were used to "catch up on research and publication activities." One scholar reported, "I took the book I am working on with me on vacation. While others might not think that would be much of a vacation, I found it enjoyable as well as necessary."

Nine scholars reported a shift from publishing in professional journals to contributing to invited chapters and writing books. Three of these nine scholars commented that, due to their growing reputations within the profession, they have been invited to write chapters for books edited by colleagues. Three others said they have shifted from publishing monographs and books to disseminating their work in professional jour-

nals. The remaining five scholars reported a change in the types of journals in which they publish, which represents an effort to focus on particular areas of specialization within higher education. For example, one respondent is focusing on publishing in legal journals, while another was writing for journals specializing in vocational issues.

Decision Points Central to the Careers of Prolific Scholars

Decision to Seek Careers in Higher Education. The majority of those interviewed felt that their career choice was neither deliberate nor decisive. Most did not plan careers in higher education as undergraduates, although two did. One of these two recalled that a friendship with a resident hall staff member sparked an interest in pursuing preparation for a career in student affairs administration. The other had planned to pursue a graduate degree in psychology and become employed at a college or university.

Four claimed that they had decided to pursue research and publication activities while still graduate students. One recalled thinking that several of his research papers written as course assignments could be submitted as manuscripts for publication. Another was required to do a master's thesis which heightened his interest in research activities. A third reported that he became aware as a graduate student that his

interest and skills were shifting from "doing" to "thinking," thus prompting an interest in engaging in scholarly research and publication.

Decision to Seek Faculty Positions. Only four of the 16 scholars who secured faculty positions immediately upon completing the doctorate reported that the job market was good for individuals aspiring to faculty positions; two claimed they had as many as four offers for faculty positions. These four scholars earned their doctoral degrees between 11 and 15 years ago.

The remaining 12 in faculty roles received their doctorates more recently and reported greater difficulty in securing their positions. They were told by mentors that they would need to establish a publication record before they could "compete" for faculty positions. As one scholar commented, "My mentor told me I wouldn't realistically be marketable at that time." Other individuals spoke of being advised to obtain an administrative position to enhance their chances of eventually securing a faculty position.

All recalled the few coveted higher education faculty positions that were open at the time they received the terminal degree. Several said they were "willing to go anywhere," and that they were "surprised" when they were offered a faculty position. Another remarked, "There was only one faculty job,

and I got lucky and got it." Another admitted that if the opportunity "for that faculty position not materialized, I would have begun looking for administrative positions elsewhere."

In addition to "luck," two other factors were mentioned as important in obtaining initial faculty positions: (1) the perceived quality or reputation of the doctoral program, and (2) reputation of the mentor.

Role of "Happenstance" or Serendipitous Events in Advancing Scholars' Careers

One respondent to the first phase of this project (Hunter & Kuh, 1984) wrote, "accidents brought me to different places at different times and probably account for 50% of the variance with regard to research activity across higher education professionals." All those interviewed admitted that this statement was true for them as well. One remarked, "It is hard to find someone who gets there without serendipitous events."

Some revealed the "happenstance" manner in which they selected their doctoral programs, others shared how they obtained a coveted assistantship or fellowship (e.g., "A flyer just came in the mail"!) Other significant "accidents" included how they selected or were selected by their graduate school adviser. One reported, "I clearly think my doctoral

adviser made a big difference in my career, and it was just happenstance that I got this guy."

Eleven scholars reported that they had moved into their positions through happenstance: for example, "Someone put my name in for the deanship which fortuitously put me into a tenured position as a higher education faculty member." "I was turned down for a position at _____ University, yet when (another) _____ institution created an opening during the summer, I secured that position." One scholar related, "While at a conference I met _____ at a bar, and we spent the rest of the conference sharing ideas for articles" (which subsequently were published). Another remarked, "My first book grew out of colleagues' interest in a course I had prepared."

While all agreed that "accidents" had been instrumental, 11 emphasized the importance of being able to take advantage of such opportunities. Several remarked that while they may have had "marvelous opportunities," they also chose wisely about putting themselves in "exciting environments."

Referring to opportunities for speaking engagements that had been extended earlier in his career, one scholar admitted, "Had I screwed up on that panel, I wouldn't have gotten another chance." Another claimed, "You can't control grants or friends' invitations, and some people are just more sensitive to seeing openings than others." Success seemed to be as much

a function of the manner in which these scholars responded to and took advantage of opportunities as their being "lucky."

Significant Graduate School Experiences

Orientation of Doctoral Program. Half of those interviewed considered their doctoral program to be "research oriented" as opposed to "practitioner-oriented." (This proportion differs from Hunter and Kuh [1984] in which 67.6% of the 81 respondents described their program as "research-oriented.") In general, the emphasis of the doctoral program, either "research-oriented " or "practitioner-oriented," was not a factor in their decisions to matriculate into particular programs.

Valuable Graduate Courses. Courses in research design or inquiry methodology (i.e. statistics) were most likely to be cited as helpful in developing competencies for scholarship. Twelve reported that assistantship or internship experiences facilitated interests and competence in inquiry. One individual who was a research assistant said this position afforded the chance to "learn how to get data and how to treat it."

Personality Characteristics of Prolific Scholars

The 59 personality characteristics considered by respondents to be related to the prolific scholarship were reduced to five clusters of personality traits. The first cluster, setting high standards, encompassed "a picky attention to detail," "a compulsive approach to establishing order," "obsessiveness," and "intensity." One scholar spoke of the "courage" that is needed to endure "hour after hour" of reworking one's ideas into manuscript form. In describing the "tough-mindedness" necessary to live up to such high standards, one scholar, who is also a marathon runner, remarked that preparing a manuscript for 15 or 16 consecutive hours until it reaches acceptable standards was "more difficult than running a marathon."

The second cluster of personality traits shared by the scholars focused on their "task oriented behavior." This cluster included being a "self-starter" and possessing "an interest and drive to complete tasks." The most frequently mentioned trait was the "self-discipline" necessary to initiate and satisfactorily complete scholarly projects. One claimed it took a certain kind of perseverance to "stick with a project before the love affair goes cold."

The third cluster of personality traits encompassed characteristics associated with a "curiosity about things." The scholars interviewed spoke of the "fun" they had solving prob-

lems and gathering information. This "inquisitiveness" and a "wide range of interests" led them to "generate series of good ideas."

The fourth cluster of personality traits included factors related to a need for recognition and acceptance by others. As one admitted, "I like to see my name in print." Another was motivated to engage in inquiry activities because "what colleagues think of me is important." This desire for recognition encouraged several to produce "more and better work," and to assist graduate students as they started their careers as scholars. Some spoke of the enjoyment that came from "helping students become inspired" and "knowing these students feel comfortable" in working with them.

Central to the fifth cluster was adaptability or flexibility. Some spoke of "juggling several research projects at one time," and emphasized the importance of being able to grapple simultaneously with several tasks and playing several demanding roles at one time (teacher, researcher, author, administrator, spouse, parent). Several spoke of the importance of not getting "upset and rattled" over academic disappointments. Most common among the disappointments were the rejection of manuscripts and the frustration of having to revise repeatedly scholarly papers. Therefore, as one scholar claimed, "While intensity of effort is necessary in engaging in scholarly work, being too intense a person is probably a detriment."

When asked to describe the affect associated with engaging in research, the responses reflected a curious mixture of "satisfaction" and "pain," of enjoyment and struggle. The concepts of "birthing" and "parental pride" were used to describe the sensation of seeing one's ideas grow into a manuscript acceptable to professional peers.

Stress and tension also accompanied the inquiry process. One scholar described the "painful process of working ideas into acceptable form" as the "purifying rite." The hardest part of professional writing was "getting started." As one scholar claimed, "It's fun once I start, but it is getting into it that is the toughest part. Getting prepared is not fun."

The time and energy required to produce an acceptable manuscript was emphasized by all of the scholars interviewed. At times, one scholar perceived progress at the rate of "an inch an hour." Several dictated first drafts to bring their ideas "out into the open." Another vividly recalled the agony associated with writing the doctoral dissertation, a task that required 13 drafts of the first chapter.

"Exhaustion" was mentioned as one of the side effects of research efforts. The preparation of manuscripts "use up every ounce of mental and physical energy," a reflection of "throwing oneself into one's work with intensity." One scholar even admitted, "Every time I finish a manuscript, I swear that's the end" (the last one).

Several became active in research activities to produce a "well-padded vita." As their careers progressed, however, these same scholars admitted that it was personal satisfaction and joy of acceptance by their peers that motivated them to continue their writing activities. For some, part of the pleasure stemmed from the "independence of scholarly work." The sentiment, "I did it myself," was often repeated.

Not all, however, viewed writing for publication as a "solo act." A minority of those interviewed claimed that their best creative works were the product of collaborative efforts with other scholars and viewed the act of writing as a "social activity."

Additional Factors Reported by Scholars As Being Significant in Their Career Development

One issue considered important to becoming a prolific scholar was selecting research topics that the researcher believed would remain interesting over time. Claimed one scholar, "One of the things I try to teach my students is to pick topics that are fun for them!" Another scholar admitted, "Most of the day-to-day tasks are drudgery; therefore, you have to pick topics that interest you."

Two scholars stated that their "lifelong interest in writing" was associated with their success as higher education

scholars. Both reported that they had already possessed sound writing skills, and that their subsequent successes as scholars reflected both interests in writing projects and the abilities to do such projects well.

One scholar spoke of the importance of being affiliated with an institution with adequate resources and name recognition. Claiming that "context is crucial," this scholar admitted that a prestigious institution carried a "halo effect" for those employed there. Admitting that colleagues employed at less prestigious institutions didn't benefit from similar advantages, this scholar perceived that it was easier for him to secure funding for research and invitations to collaborate on research projects because of his institutional affiliation.

Another spoke of the importance of "friendly competition" within academic departments. "Now that I have joined the faculty of _____University, I have to turn out as much as Professor _____ for the sake of the enterprise and for the sake of our students." This scholar admitted that this practice of "looking over one's shoulder to see what the others are doing" has enhanced his own research productivity.

One scholar spoke of the important role that doctoral students play in facilitating research productivity. According to this scholar her students expected her to be "pushing and doing." Referring to the pride taken by her students in each

of her publication achievements. She admitted, "Sometimes the gleam in their eyes is even brighter than in mine."

Finally, one scholar spoke of the significance of "times of trial in which one is forced to reassess one's work." This scholar noted that periods of self-doubt and insecurity, which often coincided with tenure and promotion challenges, have reaffirmed his belief in the importance of his scholarly work; reassessment has renewed his determination to communicate his ideas to others. Speculating on the impact of such reassessments for others, this scholar suggested that some may react to stressful times by withdrawing from research activities. Consistent with the critical incident perspective utilized in this study, this scholar asserted, "There is a mythology of careers, that careers look nice and automatic. But you don't know what's where until you look at experiences like these."

Discussions and Speculations

The discussion of some of the more interesting findings from this study is divided into three parts. First, some assertions about prolific scholarly activity are made. Second, findings of this study that appear to be particularly surprising or interesting are outlined. Finally, closing comments are offered to highlight what conversations with prolific scholars

have revealed about their behaviors and experiences and to identify issues which seem to be worthy of additional study.

Six Assertions About Prolific Higher Education Scholars

Based on the data collected in this study, we offer six assertions about prolific scholarship in higher education as a field of study. These assertions essentially underscore behaviors and experiences common to the prolific scholars participating in this study.

1. Being "adopted" by a sponsor contributes to scholarly success.

The importance of being "adopted" by a sponsor with an established track record in research and publication activities cannot be overstated. Although the importance of the mentor to success as an academic has received attention for some time (Gottlieb, 1961; Long, 1978; Reskin, 1977; Worthen & Roaden, 1975), the contributions of the sponsors to these scholars' careers extend beyond those typically provided by mentors. For example, the entry and continued involvement by these scholars in professional organizations were "sponsored" by faculty advisers or supervisors. Such a sponsorship involved aiding the scholars in becoming known in professional circles and

extending invitations to make presentations or work on projects that would make them better known. The sponsors also assisted the scholars in securing desired positions, both initial posts and subsequent positions. In addition, sponsors aided the scholars in their early research and publication activities, often by inviting neophyte scholars to collaborate with them on research projects. Clearly, the attention and guidance provided by sponsors spanned a number of years of these scholars' careers, a role not always implied by mentoring relationships.

2. Being "surrounded" by research activities and opportunities contributes to prolific scholarship.

It is not surprising that opportunities to become involved in research activities were important to the development of prolific scholars (Clark & Centra, 1982). An important factor associated with rich, supportive environments is the value of being socialized through early and continuing contacts with individuals actively pursuing research, which reinforces the importance of such activities. For example, interest in pursuing research activities was sparked by graduate school course projects, thesis requirements, and assistantship or internship experiences. Also, scholars whose first professional positions after doctoral study were in knowledge production positions

were most likely to report early involvement in research and publication activities.

3. Prolific scholars exhibit a capacity for taking advantage of fortuitous opportunities when presented.

In reflecting on their own careers, each of the scholars admitted that they had benefited from serendipitous events such as the manner in which they selected their graduate programs, and chance encounters with established and influential colleagues. Yet, threaded throughout the anecdotes shared by these scholars was evidence of their abilities to recognize opportunities when presented and their abilities to take advantage of these opportunities to the greatest extent possible. Although prolific scholars were "blessed," both with native ability and opportunities that enabled them to advance their careers, the capacity to recognize and take advantage of such opportunities seems to be a characteristic shared by the respondents to this study. This ability to recognize and take advantage of opportunities surely is not unique to successful scholars, but is probably a characteristic of persons successful in any profession.

4. A supportive work "environment" contributes to prolific scholarship.

The institutional environment contributes to prolific scholarship in two ways: (1) a clear expectation for performance is communicated by the institution and colleagues employed there, and (2) the existence of a reward structure which provides incentives to engage in scholarly inquiry. The "supportive environment," extends beyond the institutional setting to a network of professional colleagues external to the institution, which has similar performance expectations and rewards (Finkelstein, 1982). A cadre of active researchers are not always available within these prolific scholars' home departments. Professional associations and national networks of colleagues provided the needed encouragement and collegial support through an "invisible college" of higher education scholars.

5. A supportive home environment or personal lifestyle contributes to prolific scholarship.

The prolific scholars participating in this study had lifestyles that enabled them to immerse themselves in scholarly endeavors. For married scholars this meant a supportive spouse who accepts and encourages their research aspirations. The

foregone evening, weekend, and vacation time with family to accommodate research could be a major source of family tension if scholars' spouses were not supportive of these activities. Unmarried scholars emphasized their freedom to devote themselves to research and publication activity any time of the evening or weekend without feeling selfish about pursuing their own interests.

6. Prolific scholars are "researchaholics"

Prolific scholars appear to share a constellation of personal attributes which contribute to their prodigious output. The participants in this study set high standards for themselves, are task oriented, display a curiosity about their field, are motivated by a need for appreciation and recognition for their work, and are able to adapt and respond positively to diverse pressures. These attributes suggest an image of "professional compulsivity" which characterizes prolific scholars. However, it is important to note that the respondents resisted the "workaholic" label, because they claim to enjoy the work in which they are involved. Unlike a clinical definition of "workaholic," prolific scholars associate a positive affect with their work; they seem to be motivated by an authentic enjoyment in and reverence for inquiry activities not

contaminated by the debilitating need to be involved with "work" at all times.

Surprising Findings About Prolific Scholars

This study revealed several findings that although informative, could nonetheless have been predicted on the basis of previous research. For example, this study revealed that prolific scholars are most likely to be employed in professional roles in which they are expected to engage in scholarly inquiry and publication activities. Clark and Centra (1982) had previously determined that employment in positions where ample opportunities and rewards for research were provided to be associated with research productivity. Similarly, the finding of this study that prolific scholars had benefited from relationships with mentors could have been predicted from earlier research (Gottlieb, 1961; Long, 1978; Reskin, 1977; Worthen & Roaden, 1975).

The current study affirms the "early start" that prolific scholars tend to have had in engaging in research and publication activities, usually becoming involved during graduate school through assistantship or collaborative projects with faculty. Cole (1979), Heiss (1970), Lawrence and Blackburn (1984), Long (1978), Reskin (1977), and Worthen and Roaden (1975) had previously concluded that early exposure to and

involvement in research and publication activities was associated with subsequent high rates of productivity. It is also not surprising that prolific scholars are motivated intrinsically, and not by salary considerations (Startup & Gruneberg, 1976). Four findings from this study, however, were surprising and contribute to our understanding of prolific scholarship.

First, prolific scholars did not select graduate programs with intentions that these programs necessarily would provide advantages in careers as knowledge producers. Although most of the scholars in this study have degrees from research universities, respondents reported selecting institutions for graduate study as much for convenience (i.e., locale, employment) as for the quality of the doctoral programs.

Second, most prolific scholars were "adopted" by a sponsor; but like orphans, these scholars did not initiate their own adoption. This study confirmed that an informal process unfolds in graduate school wherein faculty identify and select the brightest and best students within a cohort and extend opportunities for collaboration or work relationships that, over time, take the form of sponsorship.

Apparently prolific scholars did not formulate or closely delineate in their own minds a career of prolific knowledge production, nor did their careers follow an orderly or predictable career path. In contrast to the current emphasis on carefully planning career paths, this study suggests that

productive contributors did not expect to become prolific scholars. However, early in their careers--most typically during graduate school--these individuals had early publishing success, and together with timely assistance ("sponsorship") by more established scholars, they were able to build upon their early success by continuing to conduct research and publish.

Perhaps the most revealing finding from this study is that highly talented and motivated prolific scholars work very hard to produce scholarship. Like "birthing," the process by which knowledge is produced is pleasurable but very difficult, sometimes painful. Although scholars have known all along that knowledge production does not come easy, the participants in this study shared with us the laborious efforts required to produce the large number of papers authored by prolific scholars.

What We Do Not Know About Prolific Scholars

Several questions warrant further attention. For example, relatively little is known about the process by which established scholars identify and "adopt" neophyte scholars, "sponsor" their entry into the profession, and monitor their career progress. It would be useful to talk with sponsored individuals about why they think they were chosen for sponsorship.

Established scholars could describe the process by which they identify and seek out promising scholars to "adopt."

Another line of inquiry which would extend our understanding of the development of high producers is to describe the "pay-back" process by which scholars who have been adopted or sponsored "pay-back" sponsors for the care and attention they have received. Some of the respondents suggested that at some point in the development of a scholar's career role-reversal may occur; the sponsored scholar becomes a peer of the sponsor, and may develop a more eminent reputation than the sponsor's. At that point a "pay-back" for the care and attention that had been shown earlier may take place wherein the elder "scholar" is repaid through invitations from the sponsored one to contribute to edited books or to make personal appearances.

Recommendations for Higher Education Educators

If we thought you would read further, we could outline the graduate student experiences that repeatedly seem to be related to subsequent research productivity; for example, assistantship and internship experiences (Worthen & Roaden, 1975), inquiry methodology courses (Buswell et al., 1966), and faculty inviting students to collaborate on research projects (Kuh & McCarthy, 1980). These and other factors have been noted by

other researchers and the participants in this study as important to the development of research interests and skills.

Another factor seems to be significant in the development of scholars--apart from graduate school experiences or environmental support. A confluence of serendipitous, usually fortuitous, events come together to nurture the inquiring "spirit" or "soul" of the prolific scholar. A young graduate student who is highly motivated and talented may be "picked off" by a sponsor who has a vision of this individual's potential as a scholar. Through anticipatory socialization (Merton, 1961), the elder scholar sponsors the neophyte's transition from student to the guild of productive scholars and--over a long period of time--teaches, guides, and encourages the neophyte in practicing the craft of scholarly inquiry (Bragg, 1976).

It is not impossible (or realistic) to list experiences that students <u>should have</u> which would result in subsequent scholarly success. Although some institutions attract more than their share of the best and brightest students, prolific scholars did not necessarily select their graduate programs because of their academic reputations. Faculty at institutions not considered citadels of knowledge production may encounter a talented, highly motivated graduate student who has the potential to emerge as a prolific contributor to the higher education literature. In any setting, an ambitious, talented

graduate student with the capacity to take advantage of opportunities to excel, invited to work with a productive faculty member on interesting projects--either through coursework, assistantships, or funded research--has the potential to be a prolific scholar. If the elder sponsor continues to guide and influence the neophyte's contributions over some years, another prolific scholar may emerge.

References

Astin, H.S. (1969). The woman doctorate in America. New York: Russell Sage.

Astin, H.S. (1973). Career profiles of women doctorates. In Rossi, A.S. & Calderwood, A. (Eds.) Academic women on the move (pp. 139-161). New York: Russell Sage.

Banaka, W.H. (1971). Training in depth interviewing. New York: Harper & Row.

Bayer, A.E., & Dutton, J.E. (1977). Career age and research: Professional activities of academic scientists. Journal of Higher Education, 48, 259-282.

Black, S.M., Gelso, C.J., Raphael, R., Rardin, D., & Skalkos, O. (1984). Research training in counseling psychology. Unpublished manuscript, University of Maryland, College Park.

Blackburn, R.T., & Havighurst, R.J. (1979). Career patterns of U.S. male academic social scientists. Higher Education, 8, 353-572.

Blackburn, R.T., & Havighurst, R.J. (1984). How faculty at a research university perceive and practice writing for publication. Unpublished manuscript.

Blau, P.M., & Duncan, D.D. (1967). The American occupational structure. New York: Wiley.

Bragg, A.K. (1976). The socialization process in higher education. AAHE-ERIC/Higher Education Research Report NO. 7. Washington, D.C.: American Association for Higher Education.

Braxton, J.M. (1983). Department colleagues and individual faculty publication productivity. Review of Higher Education, 6, 115-128.

Braxton, J.M. (1984). Characteristics of the most frequent publishers of articles in the highest ranked higher education journals. Presented at the meeting of the Association for the Study of Higher Education, Chicago.

Buswell, G.T., McConnell, R.T., Heiss, A.M., & Knoell, D.M. (1966). Training for educational research. Berkeley: University of California Center for Research Development in Higher Education (Final Report of USOE CRP Project Number 51074).

Chickering, A.W., Havighurtst, R. (1981). The life cycle. In A.W. Chickering and Associates, (Eds.) The Modern American College (pp. 16-50). San Francisco: Jossey-Bass.

Clark, M.J., & Centra, J.A. (1982). Conditions influencing the career accomplishments of Ph.D.'s. GRE Board Research Report GREB No. 76-2R ETS Research Report 82-18. Princeton: Educational Testing Service.

Cole, S. (1979). Age and scientific performance. American Journal of Sociology, 84, 958-977.

Erickson, E.H. (1968). Identity: Youth and crisis. New York: W.W. Norton.

Finkelstein, M. (1982). Faculty colleagueship patterns and research productivity. Paper presented at the meeting of the American Educational Research Association, New York.

Fulton, O., & Trow, M. (1974). Research activity in American higher education. Sociology of Education, 47, 29-73.

Gottlieb, D. (1961). Process of socialization in American graduate schools. Social Forces, 40, 124-131.

Gould, R.L. (1978). Transformations. New York: Simon and Schuster.

Guba, E.G., & Lincoln, Y.S. (1981). Effective evaluation. San Francisco, CA: Jossey-Bass Inc.

Guilford, J.P. (1968). Intelligence, creativity and their educational implications. San Diego: Knapp.

Hamovitch, W., & Morgenstern, R.D. (1977). Children and the productivity of academic women. Journal of Higher Education, 13, 633-645.

Heiss, A.M. (1970). Challenges to graduate schools. San Francisco, CA: Jossey-Bass.

Hogan, T.D. (1981). Faculty research activity and the quality of graduate training. Journal of Human Resources 16, 400-415.

Holland, J.L. (1966). A psychological classification scheme for vocations and major fields. Journal of Counseling Psychology, 13, 278-288.

Holland, J.L. (1973). Making vocational choices: A theory of careers. Englewood Cliffs, NJ: Prentice-Hall.

Holsti, O.R. (1969). Content analysis for the social sciences and humanities. Reading, Mass.: Addison-Wesley.

Hunter, D.E., & Kuh, G.D. (1984). A profile of prolific higher education scholars. Presented at the meeting of the American Educational Research Association. New Orleans: La.

Kuh, G.D., Lardy, B.A., & Greenlee, F.E. (1979). Research orientation of graduate students in college student personnel. Journal of College Student Personnel, 20, 99-104.

Kuh, G.D., & McCarthy, M.M. (1980). Research orientation of doctoral students in educational administration. Educational Administration Quarterly, 16, 101-102.

Lawrence, J.H., & Blackburn, R.T. (1984). Faculty careers: Maturation, demographic, and historical effects. Paper presented at the annual meeting of the

American Educational Research Association. New Orleans, April, 1984.

Lehman, H.C. (1953). Age and achievement. Princeton: Princeton University Press.

Levinson, D.J. (1978). The seasons of a man's life. New York: Ballantine.

Long, J.S. (1978). Productivity and academic position in the scientific career. American Sociological Review, 43, 889-908.

Marksberry, M.L. (1963). Foundation of creativity. New York: Harper and Row.

Merton, R.K. (1961). Social theory and social structure. Glencoe, IL: Free Press.

Miller, D.C., & Form, W.H. (1951). Industrial sociology. New York: Harper.

Mortimer, J.T., & Simmons, R.G. (1978). Adult socialization. Annual Review of Sociology, 4, 421-454.

Osipow, S.J. (1973). Theories of career development. Englewood Cliffs: Prentice-Hall.

Over, R. (1982). Does research productivity decline with age? Higher Education, 11, 511-520.

Pelz, D.C., & Andrews, F.M. (1966). Scientists in organizations. New York: Wiley, Inc.

Pervin, L.A., & Smith, S.H. (1968). Further test of the relationship between satisfaction and perceived self-environment similarity. Perceptual and Motor Skills, 26, 835-839.

Reskin, B. (1977). Scientific productivity and the reward structure of science. American Sociological Review, 42, 491-504.

Reskin, B. (1979). Academic sponsorship and scientists' careers. Sociology of Education, 52, 129-146.

Roe, A. (1957). Early determinants of vocational choice. Journal of Counseling Psychology, 4, 212-217.

Roe, A., & Siegelman, M. (1964). The origin of interests. APGA Inquiry Series, No. 1. Washington, D.C.: American Personnel and Guidance Association.

Roethlisberger, F.J., & Dickson, W.J. (1950). Management and the worker. Cambridge: Harvard University Press.

Sheehy, G. (1974). Passages: Predictable crises in adult life. New York: E.P. Dutton.

Startup, R., & Gruneberg, M.M. (1976). The rewards of research. Universities Quarterly, 30, 227-238.

Tryon, G.S. (1981). Women's publication record in the Journal of College Student Personnel over a five-year period. Journal of College Student Personnel, 22, 261.

Walton, J.M. (1982). Research activity and scholarly productivity among counselor educators. Counselor Education and Supervision, 21, 305-311.

Weidman, J.C. (1979). Nonintellective undergraduate socialization in academic departments. Journal of Higher Education, 50, 48-62.

Wolf, R.L., & Tymitz, B. (1977). Toward more natural inquiry in education. CEDR Quarterly, 10, 7-9.

Worthen, B.R., & Roaden, A.L. (1975). The research assistantship: Recommendations for colleges and universities. Bloomington, IN: Phi Delta Kappa.